Press Release

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For Immediate Release

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TARDEC Embraces Ambitious Agenda To Meet Nation's Energy Awareness Goals, Leverage The Best Technologies Available

DETROIT ARSENAL, WARREN, MI ─ In keeping with President Barack Obama's designation of October as National Energy Awareness Month, the Department of Defense's premier laboratory for automotive research and ground systems integration continues to pursue ambitious programs aimed at achieving energy security, fuel efficiency and alternate power capabilities within the Nation's ground combat military fleet.

For the past two decades, the U.S. Army Tank Automotive, Research, Development and Engineering Center (TARDEC) has taken a lead in pushing development of new, sustainable vehicle technologies like advanced batteries, hybrid-electric powertrains, fuel cells, lightweight materials, clean fuels, streamlined designs, microgrids and robotics.

Frequently working in partnership with academic and industry partners, TARDEC is harnessing the most advanced, innovative approaches to vehicle systems development in existence today – an approach that fully supports the Presidential Proclamation calling for well-funded energy research and development to protect the environment, support communities, and address global competitiveness and national security concerns. The theme of National Energy Awareness Month is *A Sustainable Energy Future: Putting All the Pieces Together.*

"The Army owns and operates the largest fleet of ground vehicles in the world – totaling almost half a million vehicles. It is, therefore, crystal clear why ground vehicles are and should be a critical focus area for Army power and energy research and development," noted TARDEC Director Dr. Grace M. Bochenek during a recent presentation. "TARDEC is the Tech Center for the DOD fleet of ground vehicles. We work to make sure the government maximizes engineering, technology and program management benefits across the fleet.

"We don't look at one vehicle or vehicle platform or even one subset of platforms," Bochenek continued. "We look at the whole spectrum of energy to see where we can add value or better integrate technology. We take a systems-of-systems approach to everything we do."

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Cutting-Edge Power and Energy Research fuels TARDEC

TARDEC's "systems-of-systems" approach – built upon comprehensive lifecycle research, engineering and design efforts that touch Soldiers, vehicles and installations – has continued to expand as the Nation has focused more urgently upon power alternative and energy security issues. The organization broke ground in August on a revolutionary 30,000-square-foot laboratory complex, the Ground System Power and Energy Laboratory (GSPEL), which will house world-class vehicle research and development operations in eight independent facilities housed within the same building. Those include the Power and Energy Vehicle Environment Lab; the Power (Electrochemical) Lab; the Electrical Power and Architecture Systems Integration Lab; the Hybrid-Electric Lab; the Fuel Cell lab; the Pulse Power and Directed Energy lab; the Thermal Management Lab; and the Air Filtration Lab. *(See accompanying GSPEL fact sheet.)*

TARDEC scientists and engineers are pursuing development of new ground fuels and lubricants, lightweight materials and structures, robotics, laser and imaging technologies, thermal and power management capabilities, alternate energy sources, reconfigurable vehicle platforms, advanced simulation and testing operations, energy storage systems and cutting-edge vehicle electronics, among other areas. Once fully operational, the GSPEL will further enhance TARDEC's ability to advance technology initiatives and meet U.S. Army energy security goals that include a reduction in overall energy consumption; an increase in energy efficiency; broader use of renewable resources; ready access to energy and power supplies; and a reduced impact on the environment.

"We have to think about our power and energy needs in a holistic manner because it's the only way to derive the most value," Bochenek acknowledged. "Advancements in our components and energy applications and their vehicle integration are helping us minimize or repurpose energy in new ways. Our energy solutions are designed to solve problems, and some of them will be game changers over time."

TARDEC collaboration helps "pull the pieces together"

Significantly, TARDEC is also leading efforts in Michigan to form partnerships with industry and academia that focus on development of valuable dual-use technologies. In January, for example, TARDEC launched an effort to leverage the skills and expertise of government, academic and industry researchers in the development of advanced vehicle batteries. The resulting Advanced Automotive Battery Initiative is pursuing development of cost competitive, flexible, lightweight, reliable, domestically-sourced advanced battery components and materials for application in military and commercial vehicles by 2015. The Initiative helped Michigan organizations secure approximately $2.4 billion in federal battery and electric vehicle research grants earlier this year. *(See accompanying Advanced Automotive Battery Initiative fact sheet.)*

"TARDEC's mission is to develop, integrate and sustain the right technology solutions for all manned and unmanned DOD ground systems and combat support systems for Current and Future Forces," TARDEC's Bochenek emphasized. "We are leading development and integration of component technologies, both on our own and through leveraging our relationships in the scientific and automotive research communities.

"Our high level of success and commitment to our Soldiers has made us a leader in the field of power and energy initiatives and brought tremendous benefits to the U.S. Army, the Nation and the state of Michigan in building a sustainable future," Bochenek concluded.

TARDEC leadership is participating in a hybrid-electric vehicle conference Oct. 19-21 at the Motor City Hotel and Conference Center in Detroit. Paul F. Skalny, director of TARDEC's National Automotive Center (NAC) will speak during a plenary session Oct. 20 about the organization's role in promoting critical dual-use research and development vehicle technologies that address the Nation's energy security and conservation goals.

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ABOUT TARDEC
Headquartered at the Detroit Arsenal in Warren, MI, TARDEC is the Nation's laboratory for advanced military automotive technology and serves as the Ground Systems Integrator for all Department of Defense (DOD) manned and unmanned ground vehicle systems. With roots dating back to the World War II era, TARDEC is a full life-cycle, systems engineering support provider-of-first-choice for all DOD ground combat and combat support weapons, equipment and vehicle systems. TARDEC develops and integrates the right technology solutions to improve Current Force effectiveness and provide superior capabilities for Future Force integration. TARDEC's technical, scientific and engineering staff lead cutting-edge research and development in Ground Systems Survivability; Power and Mobility; Intelligent Ground Systems; Force Projection; and Vehicle Electronics and Architecture.

Note: Three images are available for use with this release. Caption information follows. To download the photos, go to http://www.tardec.info/pressreleases/.

10_15_09 GSPEL Laboratory

The GSPEL will be a state-of-the-art power and energy laboratory. The eight unique labs will give TARDEC new capabilities to conduct experimentation, modeling, simulation and testing on all military ground vehicles from subsystem components to systems-of-systems. (U.S. Army image)

10_15_09 TARDEC Battery Research

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In the TARDEC Electrochemical Analysis and Research Lab, TARDEC Engineer James Mainero checks voltage on a lithium ion module with a manganese type chemistry for test and characterization. (U.S. Army TARDEC photo by Dave Skalny)

10_15_09 Army Vehicle Refueling Lines

A U.S. Marine convoy, lead by a Mine Resistant Ambush Protected (MRAP) vehicle, lines up to refuel. New synthetic fuels and alternative energy technology, produced by TARDEC and its partners, help increase efficiency in the field and provide new capabilities to Soldiers. (U.S. Marine Corps photo by LCPL Gene Allen Ainsworth)

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